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GROUP 1721



APPEAL BRIEF TRANSMITTAL FORM

In re application of: Michiya Yamada, et al.
U.S. Serial No.: 945,705
Filed: February 23, 1997
For: LUBRICATING OIL COMPOSITION

) Before the Board of
) Patent Appeals and Interferences
)
) Examiner: M. Medley
)
) Group Art Unit: 1721

#13
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THE COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

Sir:

- ☒ The undersigned hereby certifies having information and a reasonable basis for belief that this correspondence will be deposited as first-class mail with the United States Postal Service in an envelope addressed to Commissioner of Patents and Trademarks, Washington, D.C. 20231, on April 2, 1999.

Enclosed is the Appeal Brief in the above-noted application, in triplicate.

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- ☐ Petition for extension of time pursuant to 37 CFR 1.136 and 1.137 is hereby made if, and to the extent, required. The fee for this extension of time is calculated to be \$_____ to extend the time for filing this paper until _____.
- ☒ Total Fee \$ 300.00.
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- ☒ The Commissioner is hereby authorized to charge any additional fees under 37 CFR 1.16 and 1.17 which may be required by this paper, or credit any overpayment to Deposit Account No. 05-1330. A duplicate copy of this Form is enclosed.

April 1, 1999
Date of Signature

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"PATENT"

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Michiya Yamada, et al.

U. S. Serial No. 945,705

Filed: February 23, 1997

LUBRICATING OIL COMPOSITION

Honorable Commissioner of Patents and Trademarks
Washington, DC 20231

Sir:

APPEAL BRIEF UNDER 37 CFR § 1.92



) Before The Examiner

) M. Medley

) Group Art Unit 1721

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GROUP ID 1700

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REAL PARTY IN INTEREST

The invention claimed in this application is assigned to Tonen Corporation, a corporation of Japan.

RELATED APPEALS AND INTERFERENCES

There are no interferences or other appeals pending in related applications which will directly affect or be affected by or have a bearing on the Board's decision in this appeal.

STATUS OF CLAIMS

This application was filed with 5 claims, all of which are still pending.

Claims 1 to 5 stand rejected by the Examiner under 35 USC§ 103.

The rejection of claims 1 to 5 is appealed.

STATUS OF AMENDMENTS

On February 22, 1999 appellants submitted an amendment to the specification and claims 1 and 2 in response to a final rejection. That amendment was entered by the Examiner with respect to the specification and claim 1. The amendment of claim 2, however, was not entered for failure to underline the correct spelling of words inserted in lieu of bracketed misspelled words in that claim. Appellants, of course, are quite willing to correct their oversight and amend claim 2.

The Examiner stated in her Advisory Action of March 9, 1999, that in her opinion the amended claims fail to overcome the rejection under 35 USC § 103.

SUMMARY OF THE INVENTION

Appellants' invention is directed toward a lubricating oil composition that is capable of maintaining its friction reducing properties for a prolonged time under conditions of use in an engine. As appellants point out in their specification (page 2, second paragraph) the friction reducing properties of a lubrication composition change over time apparently because of oxidative degradation and the impact of other additives.

Appellants have discovered a unique and specific combination of ingredients that provide a lubricating composition that is capable of retaining friction reduction properties for extended time periods. These ingredients are set forth in sections (a), (b), and (c) in claim 1. Claim 1 also sets forth the amounts of each of these.

Appellants' claim 2 adds an additional ingredient to the additive composition, viz., a succinimide containing boron.

Incidentally, had the Examiner entered appellants' last amendment to claim 2, section (b) of that claim would be identical to section (b) of claim 1 and the obvious typographical errors appearing in the last paragraph of claim 2 would have been corrected. (Appellants proposed wording of claim 2 is set forth in "Corrected Claim on Appeal".)

In any event, to illustrate the uniqueness of the ingredients required to obtain a lube capable of retaining friction reducing properties reference is made to the comparison of appellants' Examples 1 to 6 and 10 to 15 with Comparative Examples 1 and 3. These Examples and Comparative Examples illustrate that a particular alkyl group must be present on the ZDDP component of appellants' claims 1 and 2 subpart (b).

To reiterate, appellants' ingredients are unique in combination, amount and in specific structural details.

THE ISSUES

Whether the Examiner improperly rejected claims 1 to 5 under 35 USC§103

GROUPING OF THE CLAIMS

Appellants group the claims as follows:

Group 1, having claim 1, and 3 to 5

Group 2, having claim 2.

ARGUMENT

(1) The Examiner improperly rejected claims 1 to 5 under 35 USC§103 as unpatentable over Igarashi (US 5,281,347) in view of Umemura (US 4,692,256), Rowman (US 4,360,438), Papay (US 4,178,258), Ward (US 4,846,983), Farmer (US 3,509,051), LeSuer (US 3,254,025) and White (US 4,330,420).

(A) The Group I Claims

Igarashi merely discloses a lube oil containing a molydithiocarbamate. Optionally the lube may contain a ZDDP and any one of a host of other generally recited lube additives. No reference is made to how to prolong friction reduction properties. No mention is made as to the type of alkyl group on the ZDDP. No mention is made regarding the alkali earth metal needed on the salicylate (see subpart (c) of appellants' claim 1). No mention is made as to which ingredients need be present. And, no mention is made as to the required amounts. In sum, no suggestion is made of appellants' invention by Igarashi.

Umemura, Rowman, Papay, Ward, Farmer and White are cited by the Examiner for their litany of additives, some of which are included in appellants' composition. Importantly, however, none of the references suggest that a specific combination of ingredients in a specified amount will provide friction retention properties. Moreover there is absolutely no motivation for combining the reference as proposed by the Examiner.

For example, Igarashi's optionally includes ZDDP. Umemura, however, states that antiwear properties better than obtained with ZDDP are achieved with a moly-amine complex. Why then use the additive of Umemura with the lube of Igarashi?

Rowman deals with antiwear, not friction retention, properties and makes no mention of combining with the molydithiocarbonate, the many other ingredients of appellants' composition let alone the specific amounts of those.

White discloses a composition which necessarily contains ZDTP, albeit in reduced amounts along with a synergistic amount of a sulfurized polyolefin. If synergism is taught it would seem that the sulfurized polyolefin should be combined with the other additives of Rowman, Umemura and Igarashi. But even so, no suggestion is made as to appellants' combination and amounts of specific ingredients.

Similar comments can be made with respect to each of the remaining references. In contrast, the Examples in the instant appeal clearly speaks of the patentability of the claimed invention.

Incidentally, LeSuer, which is cited for a disclosure regarding a mixture of an alkylene amine, polyisobutylene, succinic anhydride and boric acid, has no relevance to the Group I claims.

(B) The Group II Claims

Applicants' claim 2 has all of the limitations of claim 1. Claim 2, however, also includes as an ingredient a specified amount of boron.

With respect to Igarashi, Umemura, Rowman, White, Lamm, Papay and Ward, these references fail to render appellants' claim 2 unpatentable for the very same reasons they fail to render claim 1 unpatentable. Importantly, the addition of LeSeur to the list fails to render appellants' claims obvious.

LeSuer merely discloses mixing mineral oil, ZDDP, an alkylene amine, a polyisobutylene succinic anhydride and boric acid. No mention is made of amounts. No reference is made to salicylates. No indication is given to the effect of alkyl type on the ZDDP in combination with the materials of appellants' composition. Indeed, there is a total absence of any motivation to combine LeSeur with the seven other references and even if combined there is no suggestion of appellants' unique combination of specific ingredients in specific amounts.

In view of the foregoing arguments appellants respectfully submit that their invention is clearly patentable over the cited art and they request the Honorable Board to reverse the Examiner's rejection.

CLAIMS ON APPEAL

1. A lubricating oil composition capable of maintaining its friction reducing properties for a prolonged time under conditions of use in an engine comprising a lubricating base oil and additives consisting essentially of:

(a) sulfoxymolybdenum dithiocarbamate containing a hydrocarbon group having 8 to 18 carbon atoms,

(b) a zinc dialkyldithiophosphate component selected from the group consisting of (i) zinc dialkyldithiophosphate containing primary alkyl groups having 1 to 18 carbon atoms, (ii) a mixture of zinc dialkyldithiophosphate containing a primary alkyl group having 1 to 18 carbon atoms and zinc dialkyldithiophosphate containing secondary alkyl groups having 3 to 18 carbon atoms

(c) an alkylsalicylate component comprising from 0 to 50% by weight of magnesium alkylsalicylate, the balance of calcium alkylsalicylate,

the amount of molybdenum derived from the sulfoxymolybdenum dithiocarbamate being from 200 to 1000 ppm (weight basis) of the total weight of the composition,

the amount of phosphorous derived from the zinc dialkyldithiophosphate component being from 0.04 to 0.15% by weight of the total weight of the composition, and

the total amount of the alkylsalicylate component being from 0.5 to 10% by weight of the total weight of the composition.

2. A lubricating oil composition capable of maintaining its friction reducing properties for a prolonged time under conditions of use in an engine characterized by comprising a lubricating base oil and additives consisting essentially of:

(a) sulfoxymolybdenum dithiocarbamate containing a hydrocarbon group having 8 to 18 carbon atoms,

(b) a zinc dialkyldithiophosphate component selected from the group consisting of (i) zinc dialkyldithiophosphate containing primary alkyl groups having 1 to 18 carbon atoms, (ii) a mixture of zinc dialkyldithiophosphate containing a primary alkyl groups having 1 to 18 carbon atoms and zinc dialkyldithiophosphate containing secondary alkyl groups having 1 to 18 carbon atoms, and (iv) mixtures thereof,

(c) an alkylsalicylate component comprising from 0 to 50% by weight of magnesium alkylsalicylate, the balance calcium salicylate;

(d) succinimide containing boron,

the amount of molybdenum derived from the sulfoxymolybdenum dithiocarbamate being from 200 to 1000 ppm (weight basis) of the total weight of the composition,

the amount of phosphorous derived from the zinc dialkyldithiophosphate component being from 0.04 to 0.15% by weight of the total weight of the composition,

the total amount of the alkylsalicylate component being from 0.5 to 10% by weight of the total weight of the compositions,

the amount of boron derived from the succinimide containing boron being from 0.05 to 0.06% by weight of the total weight of the composition, and the boron/nitrogen ratio regarding the number of atoms containing in the succinimide containing boron is from 0.05 to 1.5.

3. The lubricating oil composition of claim 1 or 2 wherein the lubricating base oil is a hydrocracked oil and/or a wax isomerized oil containing 3% by weight or less aromatics, a sulfur content of 50 ppm or less and a nitrogen content of 50 ppm or less.

4. The lubricating oil composition of claim 1 or 2 wherein the primary or secondary alkyl group of the zinc dialkyldithiophosphate contain 3 to 12 carbon atoms.

5. The lubricating oil composition of claim 1 or 2 having a total base number of 3 to 10.

CORRECTED CLAIMS ON APPEAL

2. A lubricating oil composition capable of maintaining its friction reducing properties for a prolonged time under conditions of use in an engine characterized by comprising a lubricating base oil and additives consisting essentially of:

(a) sulfoxymolybdenum dithiocarbamate containing a hydrocarbon group having 8 to 18 carbon atoms,

(b) a zinc dialkyldithiophosphate component selected from the group consisting of (i) zinc dialkyldithiophosphate containing primary alkyl groups having 1 to 18 carbon atoms, (ii) a mixture of zinc dialkyldithiophosphate containing primary alkyl groups having 1 to 18 carbon atoms and zinc dialkyldithiophosphate containing secondary alkyl groups having 3 to 18 carbon atoms,

(c) an alkylsalicylate component comprising from 0 to 50% by weight of magnesium alkylsalicylate, the balance calcium salicylate;

(d) succinimide containing boron,

the amount of molybdenum derived from the sulfoxymolybdenum dithiocarbamate being from 200 to 1000 ppm (weight basis) of the total weight of the composition,

the amount of phosphorous derived from the zinc dialkyldithiophosphate component being from 0.04 to 0.15% by weight of the total weight of the composition,

the total amount of the alkylsalicylate component being from 0.5 to 10% by weight of the total weight of the composition,

the amount of boron derived from the succinimide containing boron being from 0.05 to 0.06% by weight of the total weight of the composition, and the boron/nitrogen ratio regarding the number of atoms contained in the succinimide containing boron is from 0.05 to 1.5.

Respectfully submitted,

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